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The Journal of the
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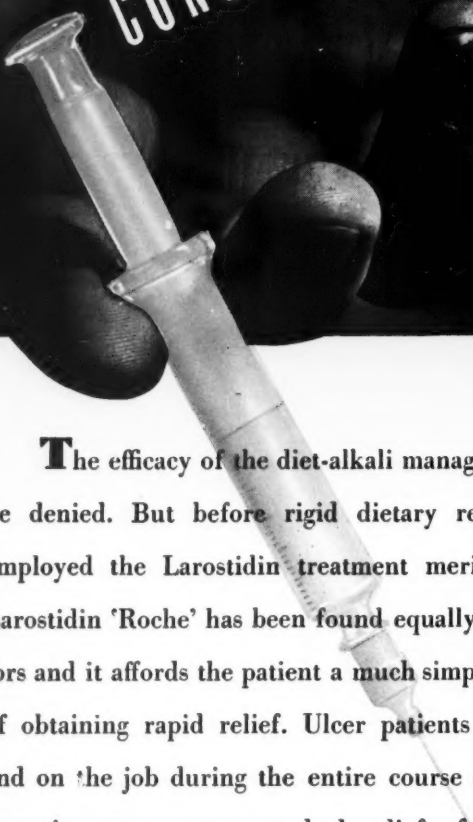
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1945

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FOR THE AMBULATORY TREATMENT OF PEPTIC ULCER

LAROSTIDIN 'ROCHE'

EDITORIALS

The Physiology of Strikes

A PHYSIOLOGIC element figures in some strikes in the field of labor which, though real, is difficult to assay; the strikers themselves are more or less unconscious of the part that it plays in their own or their leaders' motivation. The point is that large bodies of men sometimes find the strike a means of compensatory physiologic adjustment to severe industrial strain, particularly in wartime. Instead of breaking down, they strike. In the case of the individual, the same sort of thing sometimes manifests itself as absenteeism, with such factors as noise playing a big part, as emphasized by Hallowell Davis of the Harvard Medical School.

Intelligent labor leaders sometimes have this element in mind in their tactics, just as military leaders try to spare their men from undue war risk without jeopardizing ultimate objectives.

There is a factory fatigue just as there is a combat fatigue, and psychiatrists have recently been telling us that post-war casualties in the first category may predominate over those in the second.

Strikers may feel the same concern for the capitalistic system or the welfare of a particular business as their employers. We never assume subversive motives on this score on the part of employers, *no matter what they do*.

Even strikes may have, at times, judicious connotations from the physiologic standpoint. The conservation of manpower, rather than a destructive, anti-social force, may sometimes wisely animate the strikers.

Individualism in Medicine

SIR Alexander Fleming, on the occasion of receiving an honorary doctorate of Harvard University, said a very signifi-



cant thing. After describing the changes on his culture plate as the result of contamination by the *Penicillium notatum* mold, and how he at once saw that an investigation was called for, he made the following remarks: "But just reflect what would have happened if I had been a member of a team investigating some problem when the spore of *Penicillium notatum*

contaminated my cultures. I should have had to play for the team and carry on, neglecting the side issue. Then it is likely that the merits of *Penicillium notatum* would not yet be known, and the word penicillin would not have been coined, and I would not be at Harvard receiving an honorary degree."

"Use Cover"

CAPTAIN Larimore's idea of continuously reminding the overseas soldier to protect himself against venereal disease by means of matchboxes inscribed "Don't get burned . . . use cover", which inscription meets his eye every time he lights a cigarette, is very clever. Even the professional moralists are frustrated by this device, and the matchboxes are not used in this country anyway. They were about to be distributed here when the girls working in the Army stores were thought of and the domestic scheme was vetoed. Which makes us wonder what the situation will be in World War III, when women will presumably have succeeded in winning their Equal Rights Amendment and all discrimination will be out of order.

East Versus West in Science

WALDEMAR KAEMPFERT makes the striking point that "In the West the physical sciences have far outstripped biology. The reason is that profits and military advantage lie in the physical sciences but not in biology. As a result,

Russia is rapidly assuming leadership in biology, and in the physical sciences is doing work as good as Americans are doing."

Kaempffert also remarks that "Despite the ideological limitations imposed on it, science in Soviet Russia has made astonishing progress. A recent symposium in which the foremost American scientists participated testified to that fact. Moreover, there is the opinion of a joint British and American commission, which returned from Russia with nothing but praise for Soviet medicine. No other country, not even Hitler's Germany, ever mapped out the whole field of science as Soviet Russia did, and saw to it that research was conducted on all fronts."

The Role of Alcohol in the Development of Liver Cirrhosis

THE Research Council on Problems of Alcohol, affiliated with the American Association for the Advancement of Science, in its summary of results recently issued, quotes Jolliffe as follows:

"That the frequency of liver cirrhosis is greater in the inebriate portion than in the temperate and abstinent part of the population is undeniable. It would be fallacious, however, to assume from this fact alone that alcohol bears a direct causal relationship to cirrhosis. The attempts of numerous investigators to produce cirrhosis in animals by the experimental administration of alcohol have been uniformly unsuccessful. Jolliffe and Jellinek have computed the participation of inebriety in deaths from liver cirrhosis to be approximately 35 per cent. Thus, about 65 per cent of deaths from liver cirrhosis occur in non-inebriates. Obviously alcohol cannot be the sole cause of cirrhosis in man."

"Studies undertaken in this and other clinics during the past few years have demonstrated that several other afflictions of the inebriate are caused by dietary deficiencies, rather than by the direct action of alcohol. Among these are polyneuropathy, pellagra, some cardiovascular disturbances, niacin deficiency and encephalopathy and Wernicke's encephalopathy."

We understand that in Scotland, not especially famed for teetotalism, there is

very little cirrhosis. There would seem to be something protective in the Scottish drinker's diet. Possibly bearing upon the latter point is Jolliffe's finding that a high-protein diet seems to be effective therapeutically in liver cirrhosis.

Tuberculosis Complicating Diabetes

THE National Tuberculosis Association reminds us that the incidence of tuberculosis in diabetes is increasing.

Even in ordinary times tuberculosis has been found to occur at least four times as frequently in diabetic persons as in the general population.

This predisposition of diabetic persons to tuberculosis—something long familiar to practitioners—is ascribed to vitamin A deficiency, which causes "specific pathologic changes in the mucosa of the respiratory system which favor the invasion of bacteria into the lung and bronchial tissues."

The importance of prophylaxis and early diagnosis is obvious. An annual tuberculin test is in order, with a chest roentgenogram when the test is positive. Of course a productive cough calls for sputum examination and the Association suggests that when a roentgenogram is suspicious repeated aspiration of fasting stomach contents and their examination by culture or guinea-pig inoculation should be done.

Large doses of vitamin A are advisable in the management of these cases of diabetic mellitus complicated by tuberculosis.

This subject was fully discussed and the literature reviewed by Banyai and Cadden in the *Archives of Internal Medicine*, 74: 445-456, December, 1944.



Subscribes to Expanded "Doctors' Plan"

CENTRAL Hanover Bank and Trust Company of New York, 70 Broadway, has subscribed to an expanded service offered under the Doctors' Plan of United Medical Service, Inc., for the payment of doctors' fees in hospitals in addition to surgeons' and obstetricians' fees. The bank is paying the cost of the new service for those of its 2300 employees already enrolled in the Blue Cross Plan of Asso-

ciated Hospital Service of New York or those who may in the future subscribe to it. The new medical and surgical benefits became available July 1 for all persons, regardless of rank or salary, regularly employed at the bank on May 31, and for their dependents. New employees who subsequently enter the company may enroll in Associated Hospital Service of New York after they have been employed for one month.

ANAESTHETICS RESEARCH IN WARTIME

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THE wartime policy of the Nuffield Department of Anaesthetics has been directed mainly to help overcome problems in the Armed Forces. At the outbreak of World War II Britain's Service Chiefs were alive to the necessity of efficient anaesthesia. Consultants were appointed to the various Services and the limited number of skilled anaesthetists available were granted Specialist rank. It soon became evident that a large number of additional anaesthetists would become necessary, and to help meet this demand teaching was given precedence in the Department over other pressing work. Some hundreds of post-graduates, including many Officers of the United States Medical Corps, have attended here for periods varying from a few days to a few months, since the outbreak of war.

With a scarcity of experienced anaesthetists the advantages of a simple and safe anaesthetic apparatus became more obvious. Transport difficulties in the early days of the war made it desirable that it should work independently of the gas cylinders on which standard machines rely. In considering the design of such apparatus circumstances were visualized in which one anaesthetist would have to supervise several operating tables at the same time, assisted only by unskilled personnel. The apparatus, therefore, had to be as foolproof as possible. The outcome was the Oxford Vaporizer.

Through the generosity of Lord Nuffield some 2,000 Vaporizers have been widely distributed and have proved their worth in every theater of war all over the world. The anaesthetist can get the patient "under" and set the apparatus to deliver any desired concentration of ether vapor in

air, and in case of necessity hand over to an orderly or nurse whilst he himself attends to more pressing calls. In this way, during some of the worst fighting in North Africa and in Europe, anaesthetists working single-handed were able to supervise four operating tables at the same time and keep the surgeons supplied with a constant stream of anaesthetized patients. The apparatus has proved invaluable, too, in emergency surgery at sea. Here the sole doctor on the small ship induces the patient and hands over to the padre or wireless operator, pressganged into service, whilst he himself changes his role to surgeon.

Advantages of Light Ether Anaesthesia

A PART from its uses in war surgery the Oxford Vaporizer has supplied valuable information about the effects of known concentrations of ether vapor. With it, too, the advantages of light ether anaesthesia can be exploited with ease and confidence. The observations which have been made are such as may bring about a revision of many firmly and widely held beliefs regarding the noxious effects of ether compared with other anaesthetic agents.

To the majority of anaesthetists chloroform is anathema. Yet its properties of non-inflammability, potency and low volatility, and its power of inducing anaesthesia smoothly inevitably commend themselves to paratroops' Medical Officers. At their request the E.S.O. chloroform inhaler ("Epstein, Suffolk, Oxford") was designed and produced. From it the patient breathes any desired concentration of chloroform in air up to $4\frac{1}{2}$ per cent. Here, too, cylinders are not required, and controlled respiration during thoracic surgery and artificial respiration can be carried out by compressing the concertina bag. The inhaler, which was much used on the western front, can be dropped in parachute containers without breaking or spilling. In tent or ditch chloroform anaesthesia is rapidly produced and easily maintained, even in the most robust patient. In the peculiar fighting conditions of airborne troops and in other hazardous situations the advantages of chloroform, given by this controllable inhaler,

more than outweigh its acknowledged drawbacks.

A NUMBER of problems in Allied fields were investigated. These required for their elucidation a human subject; anaesthetized under bizarre conditions. In some of these experiments considerable risks were involved and no little admiration is due to the volunteers, and particularly to S/Ldr. E.A.P., an erstwhile member of this Department who not only propounded the problems but volunteered to play the role of human guinea-pig in all of them.

Maximum Height for Baling Out

ONE series of experiments, for instance, was made to determine the maximum height from which an airman can bale out by parachute and, breathing air, have a reasonable prospect of survival. Although the *percentage* of oxygen remains unchanged throughout the atmosphere, the *partial pressure* of the oxygen changes with change of altitude. At ground level the pressure exerted by the oxygen is high and oxygen is forced vigorously, as it were, into the blood-stream via the lungs. With any increase of height there is a gradual fall of oxygen pressure. The anoxia which results from breathing air at high altitudes can be reduced experimentally at ground level by inhaling an artificial mixture of oxygen in nitrogen. Thus breathing air at 20,000 feet can be simulated at sea level by breathing a mixture of 10 per cent oxygen in nitrogen. Oxygen conditions at 35,000 feet are reproduced by 4 per cent oxygen at sea level and at 40,000 by 2 per cent oxygen. The rate of descent by parachute is about 2,000 feet a minute, and as descent continues there is a gradual increase in the partial pressure of the oxygen in the atmosphere. The improved oxygenation to which the parachuting airman is exposed can be simulated at ground level by gradual increments of oxygen in the experimental mixture.

The maximum height from which such a jump can be made with any reasonable prospect of survival was found to be 40,000 feet. With this height as the starting point the experiment is indeed hazardous. The subject is suspended from the roof in a parachute harness. The weight of his body forces the strap of the harness against the chest, impeding free respira-

tion. With the effect of this superimposed on the low oxygenation extreme asphyxia quickly develops and has to be maintained for several minutes. The medical volunteers were well aware of Courville's (1) grave warning in his book, on the untoward effect of prolonged asphyxia.

The need for artificial respiration has increased in wartime. What is the most effective method? This maneuver is carried out on the apparently dead, and in order that similar conditions of extreme passivity should result, E.A.P. volunteered to be anaesthetized until normal respiration ceased. Various methods of artificial respiration were then carried out, and the respiratory exchange recorded on a moving drum. A communication on this subject is in press. Apart from providing most valuable data the volunteers for this experiment also demonstrated how few are the ill-effects of four hours of ether anaesthesia when the subject is healthy and is not being subjected to an operation.

Testing Life-Jackets Under Anaesthesia

MANY different life-jackets are used by the different Services of different nationalities. They all claim that theirs keeps the subject afloat and his head out of the water, even though he loses consciousness. Only too frequently victims are found drowned, floating but with their heads submerged. The true floating position of a jacket can be determined only on the unconscious subject because if the individual is conscious he can assume and retain almost any floating position by slight alteration of muscle tone. E.A.P. was anaesthetized on three separate occasions for several hours each. Wearing various jackets he was placed in good and unfavorable positions in smooth and rough deep water. The self-righting properties of the jackets were then assessed. Without a jacket he sank to the bottom of a bath. Cine films recorded these experiments, and a study of the films has resulted in modifications to more than one jacket.

Research in clinical anaesthesia has not been neglected, but here, too, our interest has been influenced by wartime considerations. Burns involving the face and arms and injuries to the eyes are both comparatively common in industrial and military casualties, and anaesthesia for their surgical treatment is no small problem. We confirm the value of sternal anaesthesia

for such cases. The red marrow of the sternum communicates freely with the vascular system and is a convenient and practical alternative to the intravenous route, for the introduction of anaesthetics in solution. Its reliability justifies its use in preference to the intravenous route in ophthalmic and other operations on the head where dislodgment of a needle from the vein would interrupt the smooth course of the operation. The outer plate of the sternum is punctured opposite the second intercostal space. The sternal medulla is easy to enter and once the needle is *in situ* it does not slip out. The needle is connected with a drip-feed from a bottle of anaesthesia solution.

Any anaesthetic which can be given intravenously can be given through the sternum and once the sternal needle is in place the procedure is identical with intravenous anaesthesia. We have used various solutions of pentothal, avertin and ether and favor weak solutions of the first two. A bottle convenient for their administration was described in the *Lancet* (2).

Interest in Blocking Vagus Stimulated

OUR interest in blocking the vagus was stimulated by an article by V. J. Bertola (3). A bilateral block of this nerve at its exit from the skull interrupts fibers from and to the larynx, trachea and

bronchial tree as well as the other organs supplied by this nerve. The proximity of the ninth, eleventh and twelfth nerves and the sympathetic makes some involvement of these inevitable. For example, the hypoglossal nerves may be paralyzed, in which case the tongue will behave just as though the patient were deeply anaesthetized with a general anaesthetic. The paradoxical situation arises of grave respiratory obstruction in a conscious patient. When the vagal block has been performed the patient cannot talk or swallow and his cough reflex is lost. Operations on the trachea and larynx can be performed without pain or reflex response. Anaesthesia for thoracic surgery, of which so much has been needed in the war, has problems all its own. Light anaesthesia is all that is necessary for the chest wall, but deep anaesthesia is needed to abolish reflexes arising from the bronchial tree and the mediastinal structures. The striking absence of coughing that follows this block suggests that it may well have a place in anaesthesia for this special branch of surgery.

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1. Courville, C. B.: "Untoward Effects of Nitrous Oxide Anaesthesia", 1939.
2. Macintosh, R. R., and Pask, E. A.: 1941, *Lancet*, ii, 10.
3. Bertola, V. J.: 1940, *La Prensa Medica Argentina*, No. 21, p. 1069.

PREOPERATIVE CARE OR PREPARATION OF PATIENTS

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PREOPERATIVE preparation of the patient starts, not alone with the surgeon and his associates, but with his assistants and the nursing staff. It is indeed a pleasure when all are working in harmony and the prospective surgical patient is receiving the benefit of real co-operation. Preoperative measures to make patients safe for operation are among the most important considerations in modern surgery.

IN order to prepare the patient properly for a surgical procedure it is extremely important that an accurate diagnosis be made. This does not mean that one should overlook a chronic nephritis, diabetes, pulmonary disease, renal calculus, biliary involvement or blood maladies even though the active condition may be acute gangrenous appendicitis. We certainly need to know something about the coagulation time of the blood regardless of the offending disease if surgery is to be a part of the treatment. In order to evaluate a patient's condition properly previous to

operation, it is necessary to have a thorough clinical history, a complete physical examination and the essential laboratory tests. The latter, depending on the type of case under consideration, must frequently include biochemical tests far beyond the ordinary blood count and urinalysis. Without a thorough knowledge of the above essentials, your patient and my patient may be in jeopardy even though our operative technique may be flawless.

Granting that we now possess a thorough knowledge of our surgical patient, the principal methods employed to make the patient safe for surgery certainly include rest, administration of water and salt, occasionally a change in diet, frequently glucose either by mouth, subcutaneously or by the intravenous method, and blood transfusion where that procedure may prevent a mortality.

REST in bed for twenty-four to thirty-six hours should be regarded as the minimum before all abdominal operations of choice, even in the "good risk" patients. For those not in this class a longer period of rest will be of great value. The stimuli to the kinetic system are thereby reduced, energy requirements are lessened, and the physiological requirements of the organism are reduced. Mental rest is probably as essential as physical. Crile frequently stressed the shattering effects of strong mental stimulation and, as the operation approaches, apprehension and fear may do much harm which will not be lessened by stern repression of those emotions. There is no doubt that a confident interest shown by all in attendance has a far-reaching psychological effect. If sound sleep be prevented by anxiety or pain, it should be induced by hypnotics for the former and morphine or one of its substitutes for the latter. Especially should it be assured on the night preceding the operation. Such a procedure is a great comfort to the patient and a matter of real therapeutic value in the outcome of surgical intervention. The induction of sleep or at least a state of euphoria before removal to the theater is of great value to your patient. To find the proper drug for this measure is frequently difficult. Morphine alone is often not dependable, while avertin (0.08 to 0.1 gram per kilogram of body weight) is fairly reliable if freshly prepared. Occasionally patients become rather wild under the influence of avertin

and it may cause an unusual fall in blood pressure. Be careful in using avertin where spinal anesthesia is considered.

With rare exceptions we use pentobarbital sodium, two capsules (grains 1½ each) the night before operation. This invariably produces sound sleep. It is followed by two capsules two hours before operation and one capsule one hour before operation, with morphine and atropine one-half hour before the patient is brought to the operating room. Usually sleepiness is sufficient to render the patient indifferent to extraneous conditions and the method seems quite safe. The dosage of these drugs is determined by the age and size of the patient.

FLUIDS before operation are very important. Water is the principal constituent of the body, of which it normally comprises eighty per cent. It is the medium by which nutrient is carried to, and waste products from, the tissues; it also has a profound influence on regulation of the body temperature. In order that the fundamental functions of interchange between the cells and their surrounding medium may be properly discharged, the total electrolytic concentration, and the relative proportion thereof, must be maintained at an optimum constant. So zealously is this constant guarded that we may assume it to be a factor of immense importance, and it is largely carried out by water, which, by virtue of its fluidity, can spread out the effects of concentration of any solute by rapid diffusion into the great areas of tissue spaces; conversely, loss of fluid from the blood vessels can be very rapidly restored, up to a point, by fluid leaving these spaces, especially from the muscular tissue. Persistent dehydrating influences seriously upset this mechanism and these influences are often at work in conditions of disease. Water therapy, therefore, is of highest importance. The gratification of natural sensations is normally sufficient to keep matters in due balance, but circumstances not infrequently arise which make it necessary to give fluids by other than the usual physiological channel and, since both deficient and excessive water administration may have harmful effects, we must have a working knowledge of what constitutes a reasonable water balance. In the absence of vomiting, diarrhea or other abnormal discharge, and of kid-

ney disease, it is found that such a balance may be maintained by about three liters of fluid in twenty-four hours, provided it reaches the circulation. We have to estimate the fluid lost by vomiting, et cetera, as nearly as possible and increase the fluid intake accordingly. A more generous allowance should also be made in cases of kidney lesions, since these organs then require more water to enable them to get rid of the proper amount of waste products.

With a patient lying quietly in bed, not too heavily clothed, and in a room of moderate temperature, the urinary output in twenty-four hours, plus half a liter or so allowed for insensible loss, gives a practical guide to the total water loss. Visible sweating may increase this very greatly, and the amount is difficult to assess; it is partly compensated by restricted urinary excretion but therapeutically we should regard it as an indication to increase water intake.

SINCE our cells are essentially marine structures, we have to give sodium chloride with the water. Chlorides play a very important part in the distribution of water in the blood, tissue spaces and cells, and in the maintenance of the electrolyte concentration within normal limits, as it has been shown that most of the factors which alter blood bicarbonate tend to produce compensatory changes in the chloride level. Again, sodium chloride, by its influence on the kidneys, regulates the fluid content of the body, so that, if the body loses salt, it also loses water, and water drunk by the dehydrated patient will not be retained by the kidney unless salt is taken with it.

As we give water in the form of normal saline, it should be remembered that the normal intake of sodium chloride is from ten to twenty grams a day. Large infusions, such as 4000 cc., would mean, therefore, that about twice as much salt as normal was being administered. Consequently, if no water can be given by mouth, half of such large quantities should be given as normal saline and the rest as plain water by rectum. In upper intestinal obstruction, with excessive chloride loss, it is reasonable to put larger quantities of salt into the blood stream. In emergencies, a large quantity of fluid given quickly is desirable, but in all other circumstances it should be given slowly and in known

amount.

It is well recognized that patients who vomit repeatedly or who have severe diarrhea suffer from a deficiency of chlorides and often show an associated increase in blood urea. Hypochloremia follows surgical operations, not because the chlorides are lost from the body, but because they become fixed in the body tissues. Chloride apparently plays a role in the regulation of the destruction of proteins, and the tissues injured by the surgical procedure have a special affinity for chloride, which they must draw from the blood or from some special reserve source.

THUS patients who come to operation in a state of hypochloremia from vomiting or diarrhea, as in cases of gastric ulcer with pyloric obstruction, or colitis, are in special danger of chloride deficiency. In order to put these patients in the best possible condition for operation, their chloride balance must be restored. This is accomplished by the administration of sodium chloride solution, given intravenously, but the best method of administration and the exact amount necessary to restore the balance has not been definitely determined. March and Diclouhoff have made a special study of the effect of the intravenous administration of sodium chloride solution on the blood and urinary chlorides in patients with hypochloremia. They found that an intravenous injection of sodium chloride of 8 grams in a twenty per cent solution caused only a temporary increase in blood chloride, as each day some of the chloride is fixed in the tissues, until the needed tissue reserves are supplied. Only after the blood chloride remains at its normal level does chloride appear in the urine and feces in amounts over three grams per one thousand. At that time it may be considered that the chloride deficiency has been overcome and the balance restored. The chloride reserves in the tissues have been restored so that the patient can withstand operation safely. These authors recommend, therefore, that in patients who show a definite hypochloremia, repeated injection of physiological sodium chloride solution be given daily (by the drop method) before operation until the plasma chloride becomes normal, or, if repeated blood analysis cannot be made, until the urinary chloride becomes normal.

Neither the subcutaneous nor the colonic route for the introduction of fluids is as

satisfactory as direct entrance to the blood stream by the intravenous method.

GLUCOSE has become very important and increasingly popular as a therapeutic agent both before and after operation and for good reasons. It is absorbed as such, and therefore puts no strain on conversion processes; it is essential to life, and can be given by non-physiological channels; it is readily stored as glycogen in the liver for use as required, and appears to have a protective action against hepatic irritants, and also to some extent it seems to have a similar action in respect to the cardiac muscle; it is a fat and protein-saver, and in this way prevents the ketosis of incomplete fat combustion; it promotes diuresis, and it increases the coagulability of the blood in jaundice. As to how long a patient's life can be maintained on glucose alone we do not know; proteins are essential for the building up of protoplasm, and even with the patient at rest, there is some breaking down of this compound which glucose cannot replace. Consequently any lengthy preparation for operation means that some protein food must be given; 0.5 to 0.7 g. per Kg. of body weight is the minimum of protein intake for subsistence; if less be taken, tissue protein is called upon. Protein has to be given by mouth, and so also should the glucose be given when possible, since more can be utilized in a given time when administered in this natural way than by other channels. However, as an accessory to and, to a limited extent, as a substitute for food by the mouth, intravenous glucose (chemically pure) is an important substance.

SINCE sugar can be obtained from protein in the case of need a normal blood-sugar level must not be taken as an indication that an ill-nourished patient is getting enough exogenous sugar; it would be necessary to estimate at the same time the blood and urine non-protein nitrogen. The strength of intravenous glucose solution depends on what effect is desired. In strong solutions glucose has a powerful diuretic action and in a dehydrated patient may cause an alarming exacerbation of the troubles already present. It has a similar, though less pronounced effect in 10 per cent solution when given rapidly; when used for nutritive purposes about an hour should be allowed for the administration of 1000 cc. of such a solution.

For ordinary preoperative use, when

sugar must be given by the veins, the continuous drip method of 5 per cent to 10 per cent is the best; the more the patient needs sugar, the nearer should the 10 per cent figure be approached. The minimum daily intake of carbohydrate which can be allowed with safety is 240 g. of glucose and at the rate of 60 drops per minute of 5 per cent glucose the patient would receive about 250 g. This strength is isotonic with the plasma, but does not allow anything for deposition in the liver as glycogen; hence we should increase the strength when we desire to produce this effect.

In certain circumstances, such as emergencies, considerably more should be given, and apparently this can be done without sugar spilling over into the urine, since Woodyatt, Sansum and Wilder have shown that a normal man can utilize 1200 cc. per hour of 5 per cent glucose intravenously; thus about 1000 g. of sugar in 24 hours.

PREOPERATIVELY in non-diabetic cases of the chronic type, it is not necessary to use insulin with glucose infusion, except perhaps when 10 per cent solution is being used. It is probably safer to assume that the pancreas can manufacture enough insulin to oxidize all the glucose given. It should be kept in mind that insulin seems to produce a dangerously low level of blood-sugar much more readily in non-diabetics, and especially in dehydrated cases, since one of its effects is to induce blood concentration, presumably by increasing the affinity of the tissues for water. If it should be used, repeated blood examinations are essential to watch its effects.

In cases requiring emergency operations the circumstances are different. Generally speaking, the more acute the condition the greater the risk of acidosis and, as preoperative time is limited and sugar may be strongly indicated, we have to push the treatment rather hurriedly. In this kind of case a considerable amount of glucose must be given in a comparatively short time, and insulin injections enhance the speed with which it is used; 1000 cc. of 10 per cent glucose should be given intravenously very slowly, about an hour being allowed, and 10 to 15 units of insulin injected hypodermically 10 minutes after the infusion is started, followed by another dose of the same number of units at the end. As 10 per cent glucose is a

diuretic, water or saline should be given by the rectum at the same time to offset the loss of water. When time permits, this technique may be repeated with advantage.

In the preparation of diabetics the indications for insulin are clear. The danger to these patients is ketosis. They have too much sugar in the blood, but it cannot be used. It may require several days of careful feeding and insulin injections to bring the blood-sugar to a nearly normal level. There is even greater need to avoid pre-operative starvation. Fluid should be given practically up to the last and 2 oz. of concentrated glucose should be administered an hour or two before operation with 15 to 20 units of insulin. As far as possible the operation should be performed under local or spinal anesthesia since ether is a fat solvent. For several hours after operation the same principles should obtain and progress be checked by blood examinations for sugar and carbon dioxide combining power. Larger doses of insulin will be needed when infection is present, since this reduces its efficiency. If the patient cannot take sugar by mouth, the intravenous method previously outlined must be used. The outlook in surgery for properly prepared diabetics is good, but in attempting a prognosis one must remember that vascular changes are one of the effects of diabetes, and such lesions may have a material influence on the post-operative behavior of the patient.

LET us consider blood transfusion as a preoperative measure. Few patients of the kind we are now considering do not show some degree of anemia, and for such there is no doubt that blood transfusion fulfills the requirements most ideally. Its effects are most beneficial if given before operation. Blood adds bulk to the circulation, and remains in the vessels owing to its colloidal nature; the transfused corpuscles have been shown to live and presumably function for at least a month; and oxygen and carbon dioxide carriers are supplied. Transfusion therefore attacks the problem of acid-base unbalance at its source. Since the red cell count frequently improves for a few days following the transfusion, it has been said that the bone-marrow is especially stimulated; this may, however, be due to general improvement merely, and if the red cells are not up to 4,000,000 soon after

transfusion it is better to repeat it than to wait and expect the count to improve without further help. It should be the aim to have a count of 4,500,000 red cells before operating whenever circumstances allow.

Flint invariably uses the citrate method. He says it is simple, and though reactions are not uncommon they are not confined to this method and, moreover, they appear to do no harm provided the bloods are well matched.

Abdominal discomfort, and especially lumbar pain, are indications to stop the transfusion at once, since the symptoms arise from incompatibility of bloods. Gross incompatibility is quite avoidable by proper grouping and cross matching.

SINCE ether is supposed to alter the agglutinating properties of blood for 24 hours in certain patients, one must be careful because of the variation in pre-operative and postoperative blood.

So far as surgery is concerned the clear indications for blood transfusions are low red cell count, low hemoglobin content, and low blood pressure as a result of acute or chronic bleeding or persistent ill health. Transfusion also lessens the coagulation time and so tends to make operation safe for hemophiliacs and jaundiced patients; in the latter, it has the additional effect of improving the factors which make for acid-base unbalance, to which obstructive jaundice cases are peculiarly liable. The decision as to the amount of blood to be transfused must be based on experience; 500 to 600 cc. will be sufficient in most cases. It may be a safer and more rational procedure to use smaller amounts of blood and give two or three transfusions. However, in cases of severe hemorrhage large amounts of blood may be required, repeatedly, to save the patient.

It is a great mistake to regard blood transfusion as a last recourse; indeed there is no doubt that it sometimes hastens the patient's death when it is so used. If possible the blood should be given warm and slowly and for this reason the citrate method may be preferred.

LET us for a moment discuss the factor of diet, as related to the patient contemplating surgery. In an article recently published by Mallanky, he points out that vitamin A plays the chief role in safeguarding the body against surgical infections. The absence of this accessory food

factor appears to devitalize the tissues, more especially mucous membrane and epithelium, laying them open to attack by any bacteria which may be about. He says that "animals on a vitamin A deficient diet develop bronchopneumonia much more readily than those receiving this substance in abundance." If this is true, then we should provide our preoperative patients with a diet rich in vitamin A to support them against such infections.

So in the diet of these patients we must have milk, butter and eggs, as they are rich in vitamin A. It is, of course, quite a common practice to make milk one of the principal constituents of a diet before and after operation; whether we appreciate its full significance, and that of many other matters relating to food, is doubtful.

It is rather interesting to note that the foods mentioned above are largely composed of fat, and it may be that the lungs have some function to perform in relation to fats; the facts that the thoracic duct with its fatty contents sidetracks the liver, and that the first capillary contact is in the lungs, and also that fat is found in the blood of the left heart in lesser amount than that of the right, seem to suggest that the lungs utilize the fat for some purpose.

IN order to prevent postoperative lung complications it is very essential that we know the condition of the respiratory system even if it may require the assistance of x-ray examination. We know that circulatory volume depends not only on the heart and vasomotor system, but also on the venopressor mechanism, which is mainly determined by general tonus of skeletal muscle, more especially of the abdominal muscles and particularly the diaphragm. In general, the degree of activity of respiration, the general tonus of the body, and the volume of the circulation vary together. Accordingly, it is found that in the physical depression before operation in debilitated patients certain conditions occur simultaneously; the diaphragm is relaxed, the vital capacity of the lungs is decreased, the tonus of the skeletal muscles and of the alimentary canal is lowered, and the volume of the circulation is diminished. This being true, special consideration should be given to these conditions.

Breathing exercises and possibly respiratory stimulants might be used to increase the vital capacity of the lungs, thus preventing postoperative complications. This hyperventilation might possibly prevent or help to minimize such conditions as atelectasis or other pulmonic events following anesthesia.

NO article on the preoperative care of the patient would be complete without some discussion of the liver and its important function in the human economy. It is a pity that we have no really efficient liver function tests; on the liver depends very largely the quality of blood distributed to the body generally. We know from microscopic examination of pieces of liver removed at operation that some degree of hepatitis is almost invariably present in disease of the biliary tracts, and may be very pronounced in cases of obstruction of the common duct by stone; yet so great is the liver reserve that we are frequently unable to demonstrate any definite departure from normal functional capacity. However, we should always prepare these patients as though we knew they had their hepatic reserve encroached upon, since they are apt to develop unmistakable evidence of this after operations for which adequate preparation has not been made. The measures required are mainly those already discussed under the headings of water and glucose; one other needs special mention, viz., that directed against the tendency to hemorrhage. The tendency is in some way related to jaundice of the obstructive type, whether it is overt or latent. Jaundice is supposed to be due to hyperbilirubinemia, and since deep jaundice may be present with no particular disposition to hemorrhage it would appear that a high bilirubin content of the blood is not in itself the cause. What does seem to matter is whether or not the bilirubin curve is mounting; if it is, the tendency to bleed is a serious menace; if it is stationary or falling, this threat largely disappears. In other words, the behavior of bilirubin probably gives a rough indication of the progress of hepatic disease as blood urea does with the kidneys. Some product of this injury as well as bilirubin is absorbed into the blood, or the damaged liver fails to manufacture a normal factor for coagulation, possibly fibrinogen, the normal coagulative processes being disturbed in either case.

OPERATION should therefore be postponed, if possible, until the jaundice begins to subside. Fortunately, this can be done in most cases when it is due to stone. Glucose tends to shorten the time of coagulation, probably because it improves liver function. It is customary to give calcium chloride in some form in these cases for several days prior to operation. This may or may not reduce the clotting time from 10 minutes to 3 or 4 minutes, but even if it does, the risk of hemorrhage is not necessarily removed. Blood transfusion, on the other hand, seems quite definitely to abolish or greatly diminish this risk, and in our opinion is the method of choice. At the same time it provides material which acts in many other ways for the good of the patient.

Occasionally it is necessary to drain the common duct at the earliest possible moment, irrespective of the hazards, in order to prevent extension of liver destruction; these cases are quite comparable with those of enlarged prostate in which drainage is required to save the kidneys, and as the principles are similar the measures adopted should be of the same nature as far as possible; the main indication being relief of back pressure, leaving the obstruction, occasionally, to be dealt with later. Preliminary drainage operations of this kind play a considerable part in preparing patients for major operations in many instances. Before ending this discussion concerning the biliary system may we just mention the importance of one test that we believe is of real value from a preoperative standpoint. We refer to the plasma CO_2 content of the blood. It is quite definitely known that if the blood shows the test within a range of 45 to 75 the patient is quite safe for operation. Below 45 the risk increases because of the acidosis while above 75 the hazard again presents itself from the standpoint of alkalosis. The postoperative symptoms of these two conditions are so alike that one is at sea, when complications arise, to such a degree that proper treatment is confusing, unless the acidity of the blood was known preoperatively.

THIS preoperative preparation may be continued endlessly by multiplicity of generalities.

In mentioning a few of the basic sound practices, the water balance has an important place, particularly if the kidneys

are diseased. It is hardly possible to drink too much fluid, even if the amount is not being eliminated as gauged by the urine. If the output is 1500 to 2500 cc. per 24 hours the intake is sufficient. On the other hand, if the stomach is intolerant, hypodermoclysis, intravenous injections, or rectal instillations may be used. Until the kidneys are excreting 1500 cc. or more per 24 hours, they should not be considered adequate. This question of water balance is one of our most important considerations, both in preoperative and postoperative management.

Routine purging of the bowel, except in special cases, should be avoided. The nearer the bowels are to normal preoperatively, the better postoperatively. Two or three enemas in the 12 hours preceding operation are rational and adequate to free the tract of waste products.

IT is not necessary to state here that the patient should spend from 12 to 24 hours preceding operation in the hospital. Let me emphasize that necessary laboratory work, local and general preparation, adequate sleep, and attention to the diet are all a part of this preparation. Judicious use of sedatives, which are rarely contraindicated, insures a quiet nervous system. A slow coagulation time may be speeded up by the use of calcium; a highly acid system may be reduced by alkalies; a mildly rapid heart may be made less rapid and stronger by digitalis. This discussion does not permit preparation in special cases; for example, gastric resection, toxic thyroids, clean bone or cranial cases, or kidney work. These are special subjects and must be treated as such. All pediatric cases (surgical) should be placed in a special class because the surgeon overlooking this fact will come to grief many times.

Let us remember that the presence of syphilis, diabetes mellitus, or tuberculosis is not a contraindication for surgery, but these conditions must be noted and guarded against in our preoperative preparation as well as in the postoperative care.

IN concluding this discourse we must not forget a condition called "emotional unbalance." This term is not new, but its portent is always capable of having new interpretations, call it pessimism, apprehension, premonition, fatalism, or what-

ever is desired. This type of patient should be studied very carefully. An unlooked-for internal glandular secretory derangement, a nerve syndrome, a history of near fatality at a previous operation, possibly only a minor one, may be found and corrected, or avoided. This is the case where the anoci-association treatment

of Crile may be most necessary. The judicious use of sedatives, a little digitalis or strychnine may very often change our outlook in such cases.

The will to get well plays a great part kinetically and aids in recovery; the reverse is too frequently true.

9 BUTTLES AVENUE.

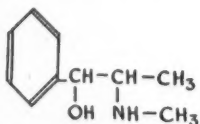
A NEW VOLATILE VASOCONSTRICTOR FOR RELIEF OF NASAL CONGESTION

L. D. Sulman, M.D.

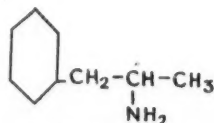
Philadelphia, Pa.

IN a recent carefully controlled study of the topical application of vasoconstrictive drugs, Butler and Ivy (1) found that, both therapeutically and histologically, volatile vasoconstrictors are usually preferable to liquid inhalants. These authors state that a volatile vasoconstrictor reaches the nasal mucosa in more diffuse form and is distributed to greater areas; that since the shrinkage effect is spread throughout the nasal cavity, the mucosa is never rendered severely ischemic at any one point; and that, even when prolonged medication is required, there is far less chance of pathological change than when nasal drops are used.

In view of the above findings it is particularly interesting that there has been made available recently a new volatile vasoconstrictor, 1-cyclohexyl-2-aminopropane (Benzedrex)*.



Ephedrine



1-Cyclohexyl-2-aminopropane

Although highly volatile, 1-cyclohexyl-2-aminopropane has been so prepared in inhaler form that quick, efficient shrinkage of the nasal mucosa can be obtained and satisfactory dosage is provided over a long period of time.

* Benzedrex Inhaler is manufactured by Smith, Kline & French Laboratories. Each inhaler contains 1-cyclohexyl-2-aminopropane, 200 mg.; oil of lavender, 60 mg.; and menthol, 20 mg.

The 1-cyclohexyl-2-aminopropane inhaler was used in the treatment of 51 cases of acute and chronic sinusitis and nasopharyngitis. The clinical observations were made in private practice and with the cooperation of Dr. Samuel M. Zion, at the Ear, Nose and Throat Dispensary, St. Joseph's Hospital, Philadelphia. Following two to four inhalations in each nostril, the full decongestive action of 1-cyclohexyl-2-aminopropane was usually apparent within five minutes (Table I).

AT the end of ten minutes, complete shrinkage of the nasal mucosa was present in 44 patients. In five others, decongestion was 75 per cent or more. The remaining two cases (acute exacerbation of chronic nasopharyngitis, and chronic ethmoiditis with septal deviation) showed only 50 per cent shrinkage; but both patients reported relief of discomfort.

The duration of mucosal shrinkage was recorded in fifty cases (Table II). In two-thirds of the entire group shrinkage lasted one to two hours; and in one instance decongestion persisted for three hours. Only five cases (10 per cent) showed shrinkage for less than forty-five minutes. One of these five patients reported that, in a later test with inhalation of 1-cyclohexyl-2-aminopropane, decongestion lasted for several hours.

IT can be stated unequivocally that in this series of cases the 1-cyclohexyl-2-aminopropane inhaler produced prompt subjective improvement. Stuffiness of the nasal passages was relieved and drainage

TABLE I		
Degree of Nasal Shrinkage		
Degree of shrinkage	Time of induction after use	
	5 minutes	10 minutes
Number of cases		
Excellent (100%)	40	44
Good (75% +)	7	5
Fair (50% +)	4	2
Total	51	51

facilitated. Two sinusitis patients reported relief of associated headache.

In unpublished data available to me, Alles (4) reported that oral administration of the sulfate of 1-cyclohexyl-2-aminopropane, in doses of 100 milligrams, produced no central nervous stimulation; and Grayson (5) found that intravenous injection of 120 milligrams had no demonstrable central effect. There were no ephedrine-like effects such as nervousness, jitteriness, or production of insomnia.

My investigation fully confirmed these reports. Following the initial inhalations, the patients were instructed to use the 1-cyclohexyl-2-aminopropane inhaler as frequently as necessary to maintain patency of the airway. In no case was there evidence of central stimulation or of any other systemic effect.

It would appear that the introduction of the 1-cyclohexyl-2-aminopropane inhaler has added a valuable new therapeutic weapon to our armamentarium, and one

which will find widespread use for the relief of nasal congestion.

Summary

(1) A new volatile vasoconstrictor, 1-cyclohexyl-2-aminopropane, is described.

(2) In fifty-one cases it produced prompt subjective improvement. Congestion was reduced and drainage facilitated.

(3) In no case was there evidence of central stimulation.

TABLE II		
Duration of Nasal Shrinkage		
Duration	Number of cases	Percentage of cases
3 hours	1	2%
2 hours	9	18%
1½ hours	9	18%
1 hour	15	30%
45 minutes	11	22%
40 minutes	1	2%
30 minutes	4	8%
	50	100%
Average duration = 72.5 minutes, i.e., approximately 1¼ hours.		

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2. Bumgardner et al., *Laryngoscope*, 54:408-420, August, 1944.
3. Proetz, A. W., *Ann. Otol. Rhin. & Laryng.*, 51:112-116, March, 1942.
4. Alles, G. A., Unpublished data.
5. Grayson, R. J., Unpublished data.

323 SOUTH 18TH STREET.



Kansas Crippled Children Now Largely Self-Supporting

THE Kansas Crippled Children Commission recently used a questionnaire to discover what had become of the boys and girls now over 21 years of age who had been cared for under its program.

Of the young men who answered, 1 out of 5 was in military service. More than half were employed full-time, and others were employed part-time or were working at home. Another 10 per cent were farming. Some were in school. Only 7.69 per cent were reported as being unable to work. A third of the men had married.

Of the girls who had been aided, almost half were married, a third were taking care of their homes, and another 40 per cent were employed full-time. Many of the girls who answered the questionnaire volunteered the information that they had

children.

More than a third of these young men and women had completed high school and 3 per cent had completed 4 years of college. Many had had additional training.

Of the group employed, almost half had found work on their own initiative. More than 30 per cent of the young men were earning \$40 a week or more. A sizable number of the boys were earning \$50 or more.

The care of the 556 individuals from whom answers were received had cost less than a quarter of a million dollars of public funds, or, on the average, only \$400 each. Through such a relatively small expenditure, these boys and girls were able to take their place as contributing members of society, and not as dependents, as in many instances might have been the case.



A Sermon in Wood

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CULTURAL MEDICINE

A SERMON IN WOOD

THERE is a door in the Hamilton (Canada) Museum from an old house in that city. The old house, demolished in 1894, had been the residence of a Doctor Case for so many years—and of his father and grandfather—that the door in question had become worn in a fashion which to Sir William Osler, an old friend of the Case family and one who always called to pay his respects when in that part of Canada, was a sermon in wood, so to speak. Sir William wrote an editorial about this symbolic door with the title of "Doctors' Signs" which was published in the *Canada Medical and Surgical Journal* (12: 312, December, 1883). This is what he said about the door's symbolism:

"HAPPY is the man whose reputation is so well known that he needs no sign! This is sometimes the case in country places and small towns, not often in cities. We know of one such in a prosperous Canadian city. Grandfather, father and son have been in 'the old stand' so long that to the inhabitants of the locality the doctor's house is amongst the things which have always been. The patients' entrance is in a side street and a small porch protects the visitor. The steps are well worn and the native grain is everywhere visible in the wooden surroundings. There is neither bell nor knocker and the door presents interesting and, so far as we know, unique evidences that votaries to this Aesculapian

shrine have not been lacking. On the panels at different heights are three well-worn places where the knuckles of successive generations of callers have rapped and rapped and rapped. The lowest of the three, about three feet from the floor, represents the work of 'tiny Tim' and 'little Nell', so often the messengers in poorer families. Higher up and of less extent is a second depression where 'Bub' and 'Sis' have pounded, and highest of all, in the upper panel a wider area where the firmer fists of the fathers and brothers have as the years rolled on worn away the wood to nearly half its thickness. Such a testimony to the esteem and faithfulness of successive generations of patients is worthy of preservation."

EVEN should left wing state socialism ultimately overwhelm us there will be doors, perhaps many more of them, bearing similar marks of wear and usage, but no Oslers, gifted with insight and sentiment and the art of expressing them, and no Doctor Cases, will be produced by the new social order; they will not be needed, for there will no longer be any deep and precious meaning in the doors such as shines forth in the one memorialized in the Canadian medical journal and the Hamilton Museum.

There will be no *individuals* behind the doors of the future and no reason for placing such doors in museums—if political medicine has its way. A.C.J.



Health of Troops Here Is Excellent

DURING this past winter and spring the health of troops stationed in the United States has been excellent, surpassing that of any previous war year. The low hospital admission rate for all diseases reflects fewer communicable conditions, as it is during this period of the year that infectious diseases usually predominate.

There were fewer respiratory diseases

than in any previous war year, although during May there was a slight rise in these cases. Pneumonia, measles, scarlet fever, meningitis, and rheumatic fever were all less prevalent than during the winter and spring of 1944. The only important infectious diseases of which this was not true were venereal diseases and infectious hepatitis.

Relapses in the United States of malaria infections acquired in tropical areas overseas increased each month until March 1945, but have since declined slightly.

MISCELLANY

THE LATE THEOPHILUS JOHNSON: A PERSONAL SKETCH OF A PICTURESQUE PHYSICIAN

[Dedicated to our zealous socialicians, lovable eccentrics, propagandists and ineffectual agitators]

AT FIRST it was "Johnson's hobby"; then he was regarded more seriously as a "reformer"; after that he was, without any malice, for the man possessed many lovable traits, ranked with the "bugs." His chief project never had a chance. They say that Semmelweiss, the European discoverer of the etiology of childbed fever and its prophylaxis, after years of discouragement became really "touched" and used to take up his favorite theme on the street with anyone who would listen to him. Well, Johnson got to be like that, too.

What was it that dear old Dr. Johnson tried to effect? He had many systematized ideas, as the psychiatrists say, so we will speak of but one or two.

FOR one thing he entertained the theory that no great numbers of published medical articles were read, other than by their authors. Then he believed that most medical journals were published in the interest of other than medical men, and that the vanity of medical writers was merely taken advantage of. In this way he accounted for the advertising. Johnson attempted to induce the profession to withdraw its support from such publications and to found a central bureau or literary clearing house for the recording of all medical data prepared by physicians, such data to be bulletined to the profession in synopsis form and copies of the original articles prepared and filed in the counties of every state, where they would be accessible to earnest practitioners for reference, purchase or loan. There would be no interference with the regular proceedings of medical societies. Johnson argued that since journal articles are read only by the few, and since no one, in any case, can read a tithe of the vast number of papers published, or even scan the field, his scheme would actually make for a better medical knowledge. Then the very paper that a reader might be interested in *today*, he pointed out, is read

today before the Idaho Medical Association. Does the reader know of its appearance? No, of course not. Perhaps months afterward it can be found listed in some Index, but under the bulletin system one would know of it and have it in synopsis form shortly after its reception by the clearing house, and then a copy of the complete article would be available at one's official county station, even if that should happen to be in Snake Root township. All the articles now written, said Johnson, however badly, are published; if very bad they appear in some wretched and obscure medium, whereas the hopper of Johnson's democratic system would receive everything, too—good and bad alike; but this was really as it should be, because an article may be very bad in form and very rich in substance. Bad is a relative term. If an article were thoroughly bad, bad in form, lacking in originality, and revealing little excuse for publication, how could the synopsis of it, prepared by an unbiased expert, fail to show its worthlessness?

Johnson used to give the following example:

Synopsis of an Article on Hydrotherapy
by P. D. Queer, M.D.
Resident Physician at Toxinaqua Springs Hotel

Historical note
Elementary Principles of Hydrotherapy
Action of the Waters at Toxinaqua
Appendix: Guide to the Health Resorts
of America

IT was pointed out to Johnson at various times by different critics that we had a number of excellent special journals and that a man interested in particular fields of medicine could, by subscribing to one of these, probably get more information in the course of his career than he could well assimilate, and on all possible points. To this Johnson would reply by re-affirming his questionable premise that only a few serious workers read medical articles. This little crotchet of perfectly logical

reasoning from unsound premises, and the founding of his life and thought and effort on a captivating syllogism, accounted, in the minds of Johnson's friends (he had no enemies), for the man's tremendous energies. That he became quite a character in the local medical world of his day was not remarkable.

In connection with Johnson's ideas about the medical press, something has happened since his death which shows how the worthwhile literature of medicine can be organized along novel lines. Thus the microfilming service of the Army Medical Library is keeping Army medical officers at remote installations in every theater of operation abreast of the latest published techniques and discoveries. Starting with twelve medical journals in January, 1943, the list of periodicals micro-filmed has grown to forty-four, covering the whole field of medicine. These are filmed immediately upon publication. Sent by airmail, military intelligence or diplomatic pouch, the rolls of film are in the hands of Medical Department personnel all over the world within fifteen days. In addition to the medical journals, unpublished manuscripts describing even more recent developments are also micro-filmed, and upon request sent to our military medical personnel. The micro-film process saves approximately ninety-five per cent of shipping space. One 100-foot roll, for example, holds about 1300 pages or from twelve to fourteen journals. Whereas one roll of microfilm weighs about six ounces, the same amount of printed material would represent six pounds.

ANOTHER scheme of Johnson's, projected by him before its later (and now familiar) promulgation in high quarters, concerned the economic organization of the entire citizenry along vocational lines. An advisory and consultative board, or parliament, at Washington, would be made up of elite representatives of all the groups constituting your economic world. properly and effectively heard—as would Thus the voice of the doctors would be properly and effectively heard—as would that of the drug trade, the clergy, the food and housing interests, the clothing people, the plumbers and all other minorities. Johnson argued that the present Congress, our only economic representatives at Washington, was in the main a soviet of lawyers. This scheme was misunderstood

by Johnson's critics, who thought he was advocating a political body and confused it with Mussolini's Corporate State and other expressions of fascism. Of course, Johnson had a veritable genius for being misunderstood.

FINALLY, there was Johnson's mistake in dealing *ironically* with the nationalization of medicine, for he was taken as advocating what he really repudiated. If doctors were to be regimented in such a fashion, why not the lawyers (public defenders paid by the government for every man, rich or poor, in either the civil or criminal courts); and why not the clergy, under the Public Welfare pretext, since spiritual as well as physical welfare should be encompassed. Thus the Government would distribute the salaried clergy along with the doctors and would decide where the spiritual (and voting) need was greatest. There was no reason to contend, Johnson sardonically insisted, that the quality of spiritual ministration would deteriorate in such circumstances.

JOHNSON was one of those ornaments of the metropolis—he was a New Yorker—whom Gerald Johnson (not related to the doctor) must have had in mind when he recently (June 12, 1945) wrote in the *New York Times*: "Jefferson's opinion to the contrary notwithstanding, a city is essential to the development of a really high civilization. A large assemblage of people within a relatively small area is requisite to the swift exchange of ideas and the collision of ideas is requisite to the identification of those that are valid. The sound ideas may then be developed to their most perfect flower elsewhere, but it is in the city that they are tested for soundness. In brief, it is the job of a metropolis to make a fool of itself in order that the rest of the country may take note and take warning. I am persuaded that New York discharges this function with an efficiency that deserves the approbation of the rest of America. The place is full of good talkers, and the charm of it is that frequently the most idiotic ideas are propounded by the ablest dialecticians. Thus they receive a fair and conclusive test. A fumbling argument may obscure the true value of the notion it seeks to present; but when the argument is brilliant and the idea still

—Concluded on page 276

CONTEMPORARY PROGRESS

MEDICINE

Thiouracil in Hyperthyroidism

M. G. VORHAUS and H. H. ROTH-
ENDLER (*New York State Journal of
Medicine*, 45:1187, May 15, 1945) report
the treatment of 25 cases of hyperthyroid-
ism with thiouracil. Thiouracil was the
only medication employed in these cases,
except that in a few instances phenobar-
bital (0.015 gm.) was also given in the
early days of treatment. Patients were
urged to continue their usual activities
without additional rest periods, and no
special diets were prescribed. The ini-
tial dose of thiouracil varied from 0.2 gm.
to 0.8 gm. daily, given in two to three di-
vided doses; the average initial dose was
0.4 gm. When there was definite clinical
evidence of improvement the dose of
thiouracil was "radically" reduced—to an
average of 0.2 gm. daily, varying from
0.2 to 0.6 gm. The average period of ob-
servation of these patients was one hun-
dred and seventy three days; one patient
has been under observation over a year
(four hundred and four days). In 3 of
these 25 patients, the drug had to be dis-
continued because of serious reactions
(leukopenia in one instance). Of the 22 re-
maining patients, all showed some favor-
able response, but in 5 cases the improve-
ment was "minimal," so that operation was
advised; thyroidectomy has been success-
fully performed in 4 of these cases. Five
patients have shown complete disappear-
ance of all symptoms of hyperthyroidism
and have remained asymptomatic after
treatment was discontinued; 3 patients are
entirely free of symptoms under treatment
with small maintenance doses of thiouracil.
Nine patients have shown marked improv-
ment but still have some residual symp-
toms of hyperthyroidism, although the
basal metabolic rate is normal in every
case. Some of these patients have main-
tained their improvement without medica-
tion for as long as five months. Of 16 pa-

tients, with palpable goiter, the size of
the goiter was definitely diminished in 5
cases; in 15 patients with clinical exoph-
thalmos, it completely disappeared in 9,
and was much reduced in 2 other cases.
Four of the patients who also had diabe-
tes showed a favorable modification of
their diabetic state under thiouracil ther-
apy. The authors are of the opinion that
because of "the unpredictable danger" of
toxic reactions to thiouracil, this drug
should not be released for general use.
Other thiourea derivatives are being
studied in a search for an equally effect-
ive and less toxic drug; until such a drug
is found, thiouracil must be employed with
"the utmost caution" in the treatment of
hyperthyroidism.

COMMENT

*A valuable but dangerous drug. It does not
require hospitalization during treatment, how-
ever. Frequent blood examinations can be
made on oxalated blood taken to the labora-
tory within a few hours. The drug should be
stopped when toxic reactions appear: agranu-
loytosis and skin eruption. Any feeling of ill-
ness should be reported and the drug stopped.
Reactions are most apt to appear during the
first week and come suddenly. Liver extract
may be used to support the bone marrow dur-
ing treatment.*

M.W.T.

Papaverine in the Treatment of Coronary-Artery Disease

WILLIAM GRAY and his associates at
Beth Israel Hospital, Boston (*New Eng-
land Journal of Medicine*, 232:389, April
5, 1945) report the use of papaverine in
the treatment of 13 patients with angina
pectoris; all of these patients had been un-
der observation, most of them for over
four years, and their response to other
methods of treatment was known. Papa-
verine hydrochloride was given by mouth
to 11 patients, one of whom was unable to
take more than a single dose of the drug

on each trial, because of nausea. The other 10 patients were given 100 or 200 mg. in a series of trial periods; some of these patients were unable to take the 200 mg. dose, but tolerated the 100 mg. dose well. There was no significant clinical improvement in any of these cases; and the standardized exercise tolerance test showed no improvement. Papaverine was given intravenously to 12 patients, a total of 52 injections. In half of these patients the exercise tolerance test showed a definite improvement in the amount of work that could be performed and in the electrocardiogram within an hour after the administration of papaverine, but this effect did not persist. In 11 cases papaverine hydrochloride was given intravenously (65 mg.) during acute myocardial infarction or coronary failure. This resulted in relief of pain in 5 of the 8 cases of acute myocardial infarction and in 1 of the 3 cases of coronary failure within two minutes after the injection. In 2 of the cases of myocardial infarction, morphine and dilauid had previously been ineffective. On the basis of these findings, the authors conclude that papaverine is of little value for the clinical treatment of patients with angina pectoris, but that it is of value for the relief of the pain of coronary occlusion or coronary failure in certain cases, although "final decision as to its use in such conditions must await further experience."

COMMENT

Perhaps the best indication for papaverine is in coronary thrombosis since it causes vasodilatation as contrasted with morphine which produces vasoconstriction.

M.W.T.

The Combined Use of Anti-Infectives and Anticoagulants in the Treatment of Subacute Bacterial Endocarditis

LEO LOEWE (*Bulletin of the New York Academy of Medicine*, 21:59, Feb. 1945) reports the treatment of 54 cases of subacute bacterial endocarditis with penicillin together with the anticoagulant

heparin. In beginning treatment, the dosage of penicillin is determined by sensitivity tests on the offending organism in each case and by determining the penicillin levels in the blood with different methods of administration. During this preliminary period, heparin is withheld. It has been found that penicillin is best administered by continuous intravenous drip in Ringer's solution. Only in cases in which the patient is in congestive failure and the intravenous administration of the bulk of fluid is contraindicated, intramuscular injection of penicillin

is employed until intravenous administration can be resumed. The dosage varies according to sensitivity of the organism causing the infection; the daily dosage in the cases reported ranged from 40,000 to 1,000,000 Oxford units; the total dosage from 867,000 to 48,930,000 Oxford units. Heparin, which is given as soon as the preliminary study of penicillin dosage is completed, is administered by a special method devised for subcutaneous deposition of the drug with the use of the Pitkin menstruum, which gives a slower and more equable absorption of heparin than any other method. The dosage of heparin is determined by frequent determinations of the coagulation time, and should be suffi-

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cient to maintain the coagulation time at 30 to 60 minutes. This usually requires subcutaneous deposits of 300 mg. every second or third day. Accessory treatment includes high caloric, high vitamin diets with supplementary multivitamin preparations, hematinics when there is anemia, and blood transfusions when indicated. As blood transfusion makes it necessary to discontinue heparinization temporarily, it is postponed, when possible, till the penicillin-heparin treatment is stopped. Of the 54 patients treated, 40 responded favorably to treatment and 37 are living and many are carrying on their normal activities. There were 3 deaths in this group of 40 patients; in 2 of these cases in which death was due to congestive heart failure, autopsy showed no signs of active bacterial endocarditis. In the 14 cases in which treatment failed, the failure is attributed to the patient's inability to withstand the infection in 10 cases, in 3 to the refractoriness of the infecting organism to penicillin, and in one to reinfection with another strain of streptococcus. These results lead the author to conclude that in cases of subacute bacterial endocarditis, in which the patient's general condition is good, the causative organism sensitive to penicillin, and the duration of the disease less than three months, a satisfactory result may be "anticipated" with combined penicillin and heparin therapy.

COMMENT

This treatment represents a great advance in the therapy of subacute bacterial endocarditis.

M.W.T.

The Modern Treatment of Cirrhosis of the Liver

W. H. BARKER (*Medical Clinics of North America*, March 1945:273) states that both experimental and clinical evidence indicates that dietary deficiency is an important etiologic factor in fatty liver and cirrhosis of the liver. On the basis of this evidence, the most recent treatment for fatty liver and cirrhosis is the use of nutritious diet high in calories, proteins and vitamins, especially the vitamin B complex. The author and his associates at Johns Hopkins Hospital have employed

a modification of the diet described by Patek; this diet is rich in protein and ample in carbohydrate and fat. The fat content of the Patek diet, however, has been reduced for patients with jaundice or diarrhea; meat is included in this diet since it is a source of protein of "high biologic value." This diet is supplemented with 30 to 50 gm. of brewer's yeast powder daily and polyvitamin capsules sufficient to supply at least twice the estimated normal adult requirement of vitamins A, C, D, thiamine, nicotinic acid (or the amide) and riboflavin. If there are hemorrhagic symptoms with prolongation of prothrombin time, vitamin K is given by mouth (with bile salts to promote absorption) or parenterally. Intramuscular injection of crude liver extract (or crude liver extract by mouth) has been employed in some cases, especially if there is macrocytic anemia. As there is experimental evidence that choline has a lipotropic action and a protective effect on the liver, choline chloride has also been given in doses of 1.5 gm. daily in the form of a 10 per cent elixir (5 cc. after each meal). No undesirable effects have been noted in patients who have been given choline in this dosage for weeks or months. The results of the therapy outlined have been sufficiently encouraging to warrant its continued use. Four illustrative cases are reported; 2 of these patients showed a good response to the therapy outlined (including choline); in one the cirrhosis was so advanced that the pathologic changes were apparently "completely irreversible" and the patient died in spite of continued therapy. In the fourth case the liver cirrhosis was associated with and possibly secondary to Banti's splenic anemia. Various methods of treatment were without effect until splenectomy was done; following operation the patient continued the Patek diet supplemented by yeast and choline, and has remained in excellent health.

COMMENT

It is interesting to compare the results of treatment today with those of Dieulafoy in 1912. The older French clinicians wrote on the curability of hepatic cirrhosis. In those days the treatment consisted of a milk diet. Thus a high protein diet was used at that time.

M.W.T.

UROLOGY

The Use of Penicillin in the Treatment of Urogenital Infections

L. R. REYNOLDS and H. M. WEY-RAUCH (*Journal of Urology*, 53:614, April 1945) report the treatment of 535 cases of infection of the male urogenital tract at a Naval Hospital; 509 of these cases were gonococcal infection and 26 non-gonococcal. In the cases of gonococcal infection the administration of 80,000 or more units of penicillin in doses of 10,000 units given intramuscularly every three hours resulted in cure of more than 98 per cent. The rate of cure was as high in cases with complications (prostatitis, epididymitis, etc.) as in cases of uncomplicated urethritis; and as high in chronic as in acute cases. On the basis of their results in these cases, the authors recommend a dosage of 100,000 units of penicillin for uncomplicated gonorrheal infections and 160,000 units for cases with severe complications, given in doses of 10,000 units every three hours. In some cases, in which the course of treatment was shortened by giving five doses of 20,000 units each, results were not so satisfactory as with the more prolonged schedule. It has been definitely established that penicillin is more effective in the treatment of gonorrhea than the sulfonamides and is non-toxic in therapeutic doses. Its one disadvantage is that it is not effective by oral administration. In non-gonococcal urogenital infections, penicillin proved less valuable. It is not effective against the colon bacillus, which is the cause of a large proportion of such infections. In 6 cases of prostatitis, only one patient responded favorably to penicillin (a case of acute staphylococcal infection); in 5 cases of acute epididymitis, only one was benefited. Penicillin was of no value in 9 cases of non-specific urethritis; and cured only 2 of 11 cases of non-specific infection of the seminal tract. In a small group of cases of infection of the upper urinary tract—perinephritis and pyelonephritis—especially of staphylococcal origin, penicillin proved more effective;

further investigation may show it to be of great value in such cases. Even with penicillin, when a large collection of pus is present, either in a gonococcal or a pyogenic infection of the urogenital tract, "sound surgical principles of drainage should not be ignored."

COMMENT

Penicillin appears to be coming into its own and all the way. The very significant thing to note is the nearly equal success in gonococcal infections no matter whether acute or chronic, complicated or uncomplicated. The impressive fact is the large doses which may be administered. There are few remedies which promise well so consistently.

V.C.P.

Advanced Cancer of the Prostate

A. L. PARLOW (*New York State Journal of Medicine*, 45:383, February 25, 1945) reports 75 cases of advanced cancer of the prostate, in which radical prostatectomy was contraindicated because the disease was not confined within the prostatic capsule. Orchiectomy was done in all of these patients, and prostatic resection in addition, in 18 cases. In 18 cases no relief of symptoms resulted from orchiectomy; stilbestrol proved equally ineffective. Fifty-seven patients were definitely benefited by the operation; metastatic pain was relieved, and there was general subjective improvement; 43 of this group, however, developed recurrent symptoms in from eight to thirty months. In 21 of these 57 cases, there was partial regression of the tumor; in 36 cases, there was complete clinical disappearance of the carcinoma. Such clinical disappearance of the carcinoma occurred only in cases in which microscopic examination had showed the growth to be adenocarcinoma. All but 14 of these 36 patients, however, showed reactivation of the carcinoma and recurrence of symptoms after an interval of twelve to twenty-nine months. Stilbestrol given to those patients relieved some of their symptoms but did not control the

advance of the disease. On the basis of these findings the author concludes that orchietomy is a procedure of proved value in cases of advanced adenocarcinoma of the prostate, but is not a cure for prostatic carcinoma. He suggests the possibility of radical perineal prostatectomy in those cases in which complete regression of the carcinoma results from orchietomy and estrogen therapy.

COMMENT

Advanced cancer is always hopeless no matter where it is located nor what may be attempted for it. This author lists the various procedures which are commonly used, but in the last analysis they only palliate and temperize. Such cancers are in the last degree pathetic.

V.C.P.

Anomalies of the Ureters and Kidneys As Observed by the Radiologist

B. H. NICHOLS (*Urologic and Cutaneous Review*, 49:265, May 1945) discusses the various anomalies of the ureters and kidneys that are of clinical importance, because they may cause symptoms or may predispose to the development of other pathological conditions in the kidneys. In most of these cases diagnosis can be made only by the radiologist. The major congenital anomalies and deformities of the ureters and kidneys which are seen by the radiologist are: Duplication of the ureter; deformity of the ureter by stricture, kinks, or valves; ureterocele and cystic deformity of the ureter; solitary kidney, fused kidney (including horseshoe kidney), ectopic kidney, congenital polycystic kidney, solitary renal cyst and anomalous renal vessels. While most of these conditions are best visualized by means of excretory urography, the author states that retrograde pyelography may be necessary to establish the diagnosis in congenital polycystic kidneys and in solitary renal cyst if the cyst is in the upper pole of the kidney. He also notes that occasionally fusion of the kidneys, especially of the lower poles, may be demonstrated on a plain roentgenogram of the urinary tract. Anomalous renal vessels supplying the lower pole cause intermittent ureteral obstruction and hydronephrosis, with symptoms that are usually not diagnostic. Excretory urography is

essential for the diagnosis of such anomalous vessels, and early resection of such vessels allows the renal function to return to normal. Very similar symptoms are caused by congenital obstruction of the upper ureter by bands, and these are difficult to differentiate roentgenologically from an aberrant vessel; however, early surgical intervention is usually indicated in both conditions.

COMMENT

Anomalies of the kidneys and ureters are more numerous, by and large, than of any other organs. The principle of treatment is the kidneys must excrete the urine normally and urethral obstruction must be removed. If the case is one of stricture of the ureter much can be accomplished by dilatation of the ureter or ureters. As in the case of dilatation of the urethra this treatment must be continued and repeated until one treatment every 6 to 12 months is sufficient.

V.C.P.

Testicular Tumors

V. VERMOTEN (*Archives of Surgery*, 50:63, Feb. 1945) reports that at an Army Hospital a diagnosis of testicular tumor was made in 62 cases in 2 years. This would indicate a higher incidence of testicular tumors in Army personnel than in civilians, but this apparently higher incidence is due, the author believes, to the fact that men in the army have frequent physical examinations, and that a man who is physically fit and active is particularly apt to notice an enlarged or painful testis. Trauma was not found to be a factor in the causation of the testicular tumor in any of these cases, although trauma in some instances drew the man's attention to the tumor. Although the diagnosis of testicular tumor was not made on the first examination in all instances, all but one of these patients were operated on within four months after they were first seen. The most frequent erroneous diagnoses were epididymitis, orchitis or epididymo-orchitis (14 cases), traumatic orchitis (5 cases), or hydrocele (6 cases). Histologically 11 of the tumors were benign and 51 malignant. In 15 of the cases of malignant tumor, there was evidence of metastases when the patient was first seen; and in 2 of these cases, there was no clinical evidence of the primary tumor at that time. When a diagnosis of malignant

tumor of the testis was made, or the diagnosis was suspected, either a radical orchiectomy or an exploratory operation was done. For the radical operation the incision was made from the level of the external inguinal ring to above the internal ring. The cord was dissected up to beyond the point where the vas deferens and the vascular portion of cord separate, ligated and divided as high as possible. The vas deferens was pulled up, ligated and divided. The cord was then dissected down to the external ring and the testis removed. If the testicular tumor was small, it could be delivered through the original incision; if it was large, a scrotal incision was made to deliver the testis and the cord. For the exploratory operation, when the diagnosis was not definitely established, a scrotal incision was made through the tunica vaginalis and the testis delivered into the wound; the radical operation was done if the tumor was found to involve the testis. Operation was followed by deep x-ray therapy to the abdominal lymph nodes. In the author's series of 51 patients, 11 have died; 6 are living with metastases; 36 (72 per cent) are living without evidence of recurrence or metastases, 16 of them for one year to twenty-five months.

COMMENT

With testicular tumors a delay of four months between diagnosis and operation is not advisable because so many of these tumors are from the outset or after slight development very malignant. In this respect they are like tumors of the breast. "When in doubt operate and finish the fine points of diagnosis afterward is a sane rule". A case of my own was that of a small nodule in the epididymis which might have been a cyst or a tuberculous nodule or a neoplasm. After operation the nodule was found to be a black teratoma, about the most malignant of all tumors. I prefer to dissect the cord from its bed, clamp above and below with broad ligament clamps to cut off any spread of cancer cells by handling, and then enucleate through the inguinal incision. Drainage of the scrotal cavity through an opening in the lowest part of the scrotum is advisable. This patient was alive, well and without secondary deposits 3 years after the operation. He was then lost to sight.

V.C.P.

The Preventive Treatment of Calcium Urolithiasis; The Important Role of Early and Frequent Roentgenographic Examinations

R. H. FLOCKS (*Journal of Urology*, 53:427, March 1945) reports 51 cases of calcium urolithiasis following fracture of the spine, of the pelvis, of the femur, or traumatic stricture of the urethra. In such cases the factors predisposing to calcium urolithiasis are prolonged immobilization of the patient, possible paralysis of portions of the urinary tract, obstruction and infection. With immobilization, hypercalcinuria cannot be prevented; stasis of some degree also cannot be avoided, especially if there is damage to the central nervous system; and infection cannot be entirely prevented when the use of catheters and drainage tubes is necessary. In such cases the preventive treatment of calcium urolithiasis includes: The maintenance of a large fluid output; control of diet; control of stasis; control of infection; the continuation of treatment for three months after immobilization has ceased; and frequent roentgenographic check-up examinations. The author emphasizes the importance of the last-named method. The method of x-ray examination employed is to make one plain film and another film twenty minutes after the intravenous injection of 20 cc. of diodrast. Such examinations are made one month, two months, three months and every six months for one year "after the onset of the predisposing condition." In this way any stones that may form are discovered in their early stages, when they are "loose masses of small concretions," which can be removed by irrigation or other methods before serious damage has resulted to the urinary tract; 7 illustrative cases are reported.

COMMENT

Any form of lithiasis requires the sequence of treatment which this paper covers commendably: large fluid intake and output; control of diet; control of stasis; control of infection; continuation of treatment for 3 months after immobilization has ceased; x-ray check-ups frequently, which I would add should be every 6 to 12 months for years. Such check-ups are, in a sense, health insurance.

V.C.P.



NEUROLOGY

Mental Symptoms Following Head Injury; A Statistical Analysis of Two Hundred Cases

A. ADLER (*Archives of Neurology and Psychiatry* 53:34, Jan. 1945) presents an analysis of mental symptoms following head injury in 200 patients who were followed up for varying periods of time—six months or over in most instances—after discharge from the hospital. The ages of these patients varied from 15 to 55 years; 125 were males and 75 females. There was no period of coma in 20 patients; 90 were comatose or semicomatose for less than ten minutes; 42 patients for ten to thirty minutes; 20 for thirty to sixty minutes; 17 patients for one to six hours; the remainder for over six hours, except for 2 patients in whom the duration of coma was not ascertained, but was brief. There was a period of disorientation for less than twelve hours in 173 patients; for twelve to twenty-four hours in 4 patients; for one to seven days in 12 patients; and for over seven days in 11 patients. There was evidence of fracture of the skull in 34 cases. In the entire series the incidence of mental symptoms following injury was 31.5 per cent. The incidence was highest in the oldest age group (50 to 55 years). The occurrence of coma and post-traumatic amnesia, persistence of headache and dizziness and a prolonged stay in the hospital were also associated with a relatively high incidence of post-traumatic mental symptoms. The largest group of patients with post-traumatic mental symptoms (48) showed anxiety states. Twenty-three of these patients had previously had normal personalities, the remainder had shown pre-existing "psychiatric liabilities." Of the 26 patients with post-traumatic neuroses, all but 3 showed the picture of anxiety neurosis. Symptoms of personality change only, such as euphoria, moodiness and apathy, in addition to changes in the intellectual status, were present in 7 patients. Mental symptoms, particularly symptoms of anxiety, with headache and dizziness, are the commonest symptoms in convalescence from head injury. They are also the major

cause of disability, especially prolonged disability, following such injury. A number of factors enter into the production of such anxiety symptoms, the most important being reproduction of fears relating to the injury, and the "accentuation and elaboration" of pre-existing conflicts related to occupational and financial situations.

Management of Myasthenia Gravis

RICHARD RICHTER (*Medical Clinics of North America*, Jan. 1945:126) considers myasthenia gravis to be a metabolic disease in which the transmission of the motor nerve impulse is blocked by interference with the action of acetylcholine upon the muscle fiber. Muscular weakness is the characteristic symptom of the disease; fatigability of the affected muscles during sustained or repeated effort is typical. The muscles of the extremities and back are often affected, but the muscles innervated by the motor cranial nerves are most frequently involved. Therefore ptosis, strabismus and diplopia (due to involvement of the extrinsic muscles of the eye) and dysarthria, dysphagia and difficulty in chewing (due to involvement of the muscles of the face and of the pharynx) are the cardinal signs of myasthenia gravis. The subcutaneous injection of 1 mg. of prostigmine methyl sulfate promptly relieves the symptoms. In cases of emergency, such as profound weakness or paralysis of the muscles of respiration and deglutition, prostigmine should be given in doses of 1.5 to 2 mg. subcutaneously. For the routine treatment of myasthenia gravis, prostigmine is given by mouth. The dosage and method of administration must be determined for each individual. An average twenty-four hour dosage is six to eight 15 mg. tablets taken in divided doses at three-hour intervals; some patients require a larger dosage. Ephedrine, guanidine and potassium are also of value, but these drugs should be employed only as a supplement to prostigmine therapy, not as a substitute for it. General hygienic measures, especially adequate rest and avoidance of undue physical exertion and strain, are also of importance in the management of myasthenia

gravis. In cases refractory to medical treatment roentgen-ray therapy of the thymus may be tried; the results reported have been "conflicting and inconclusive," but there appears to be no contraindications to its use. Recently thymectomy has been employed in the treatment of myasthenia gravis; in many cases patients show prompt and decisive improvement after operation; this is most frequently the case when an actual tumor of the thymus is present and is removed. In patients seriously handicapped by the disease and not responding to medical treatment, the possibility of thymectomy may be considered, especially if x-ray examination shows an anterior mediastinal tumor.

Lesions in the Brain Associated with Malaria

R. H. RIGDON and D. E. FLETCHER (*Archives of Neurology and Psychiatry*, 53:191, March 1945) report a study of the pathological changes in the brain of a child who died in the acute stage of infection with *P. falciparum* and in the brains of monkeys, ducks and chicks infected with malaria. The changes in the human brain and the brains of the experimental animals were fundamentally the same. Edema was constantly present. The nerve cells of the cerebral cortex in the human brain were more severely damaged than those in the monkey. The three specific lesions described as characteristic of malarial damage to the brain—petechiae, malarial nodules and Dürck granulomas—were observed in the authors' studies; and in addition they noted other degenerative changes in the myelin. The cerebral hemisphere and the cerebellum showed the most extensive injury. The patient whose brain was used in this study showed a severe anemia at the time of death. Anemia also developed rapidly in monkeys and ducks infected with malaria. Because the malarial parasites utilize hemoglobin, "it is reasonable to believe" that parasitized red blood cells do not carry the same quantity of oxygen as non-parasitized cells. These factors would result in anoxia, which is apparently the cause of the brain changes in malaria. This conclusion is supported by the fact that the changes observed in the human brain and animal brains in malarial infection are identical with changes in brains of experimental animals found by Hartman to be due to anoxia.

Fatigue as a Precipitating Factor in Latent Epilepsy

M. H. WEINBERG (*Journal of Nervous and Mental Disease* 101:251, March 1945) reports 5 cases in which epileptic attacks occurred only after a more or less prolonged period of intensive activity, either a short time after this "fatiguing experience" or when the patient resumed his usual activities without sufficient rest. The convulsions in these patients were usually very severe, and in 3 of them, examination soon after the attacks showed severe conjunctival hemorrhages and other organic neurological signs which did not disappear as readily as similar organic manifestations that occasionally follow ordinary epileptic seizures. None of these patients required epileptic therapy. If sedatives were given, they were used for only a short period, and there was no recurrence of convulsive symptoms when they were discontinued. Only excessive fatigue produced an attack. Only one of these patients has been studied by electroencephalography, and in this case the encephalogram was negative. Further encephalographic studies should be made in cases of this type, preferably immediately after an attack. This type of convulsive seizure is relatively rare, yet the author believes that the existence of such cases should be recognized. The treatment is different from that of true epilepsy, the management of such cases much more simple and the prognosis more hopeful. The author is of the opinion that the use of the term "latent epilepsy" is justified in such cases.

Intraspinal Thiamin Chloride in the Treatment of Gastric Crisis or Lightning Pains in Tabes Dorsalis

B. H. KESERT and M. O. GROSSMAN (*Journal of Nervous and Mental Disease*, 101:372, April 1945) report the treatment of 8 cases of tabes dorsalis with lightning pains or gastric crises by means of intraspinal injections of thiamin chloride. The procedure is carried out with the patient lying on his side, the needle being inserted in the interspace between the third and fourth lumbar vertebrae. The dosage of thiamin chloride varied from 50 to 100 mg., 50 to 60 mg. being used most frequently. From one to six injections were given. In the cases in which multiple injections were given, the interval between injections varied, but was always at least one month. The characteristic pain was

intensified after the injection of thiamine chloride for about 12 hours, but after that time there was definite relief, sometimes complete relief. The relief persisted for several weeks to months, and sometimes longer. No harmful effects of the treat-

ment were observed, the use of narcotics was avoided, and chordotomy proved unnecessary in patients for whom it had been suggested previous to the trial of thiamin chloride therapy.



MISCELLANY

—Concluded from page 267

seems unsound there is no question about it. The thing won't do. There is no other city in the country in which nonsense is advocated so ably as it is in New York; hence nowhere else is so much of it screened out. The value of this service to the rest of the country is beyond precise

computation, but obviously it is very great. In providing it, New York does a true metropolitan job and is entitled to credit for so doing."

Without such lovable entertainers and intense partisans to lighten our labors and our moods, how dull and jejune things would be! They are benefactors whom we could not do without; and it is well that we so regard them, since they are irreplaceable in any case. A.C.J.



The R. L. Dickinson Sculptural Models Acquired by Cleveland Health Museum

DR. Lester Taylor, president of Cleveland Health Museum, announces that the one hundred R. L. Dickinson sculptural models of human reproduction have been acquired by the Museum for display and for distribution to medical, nursing and health groups.

The acquisition was made possible through the Prentiss Foundation. Elisabeth Severence Prentiss, founder of the Foundation, gave the original building to the Museum, contributed to it while living and left it an endowment at her death in January, 1944.

The collection includes: Standard figures of adult male and female, and of newborn baby; pregnancy and labor; anatomy of male and female reproductive organs; venereal diseases; some surgical operations; full-size manikin for teaching medical students delivery; the World's Fair series of childbirth in successive stages; six small models for the doctor's desk for explanation to patients or students; and others for specialized uses.

The Museum acquires possession and control of distribution of the models and

option on future additions to the collection. This means that the Museum will be in position to make copies from the originals for other institutions. For multiple reproduction, nothing of this detail and scientific accuracy or artistic merit exists in this country or abroad.

The Eye-Bank for Sight Restoration, Inc.

TEACHING and research fellowships to extend the knowledge and skill required for the delicate operation which restores sight to a blind person with a corneal defect through the grafting of healthy corneal tissue will be established in leading medical schools throughout the country by The Eye-Bank for Sight Restoration, Inc. To carry on this program of education and research, as well as its other activities, The Eye-Bank will undertake to raise \$1,000,000.

An initial grant of \$25,000 has been made by the Milbank Memorial Fund to enable The Eye-Bank to function pending the time when the importance of the undertaking may gain recognition and widespread support. It is hoped that financial support will be forthcoming from the general public in sums of any amount.

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MED

Medical BOOK NEWS



Classical Quotations

● Why drag apart one of the strongest joints in the body, an operation requiring the use of extreme force, for the sake of the gain of an infinitesimal space? The gain is so slight and the evil effects so certain and grave, that the safety of the patient warns against, if it does not actually forbid the operation.

WILLIAM HUNTER

Reflections on dividing the Symphysis of the Osse Pubis. Published as a supplement to the second edition of J. Vaughan's "Cases and Observations on the Hydrophobia," London, 1778.

Bacteriology

Bacteriology and Allied Subjects. By Louis Gershenfeld, D.Sc. Easton, Pa., Mack Publishing Co., [c. 1945]. 4to. 561 pages, illustrated. Cloth, \$6.00.

THE author of this book has produced a text that is admirably suited to the purpose for which it was intended: that is, to satisfy the needs of pharmacists, biologists, and chemists for information in this field. The discussion of pathogenic bacteria and viruses is necessarily brief, but adequate to its purpose. This is also true of the section devoted to parasitology.

What makes this book especially valuable is the material given on the subjects of sterilization and disinfection; insect control; the collection and handling of clinical specimens; and the preparation, use, storage and handling of biological products. In these matters this text is superior to any of the books on bacteriology usually available; there is much information of the kind that is hard to find and yet is very useful to any one that works in these fields.

ARNOLD H. EGGERTH

Edited by

ALFRED E. SHIPLEY, M.D., Dr. P.H.

All books for review and communications concerning Book News should be addressed to the Editor of this department, 1313 Bedford Avenue, Brooklyn 16, N. Y.

Armstrong's Aviation Medicine

Principles and Practice of Aviation Medicine. By Col. Harry G. Armstrong, M.C., U.S.A. 2nd Edition. Baltimore, The Williams & Wilkins Co., [c. 1943]. 514 pages, illustrated. 8vo. Cloth, \$6.50.

THIS second edition of Colonel Armstrong's book has been brought up to date with a number of changes, revisions, and additions. The elimination of obsolete material and the careful selection of the new for various chapters make the work an authority on Aviation Medicine.

It is surprising that the author who has been in active war theatre at a great distance from the publisher has been able to revise his book even to this extent. Doubtless he has much more new information which could have been included had it not been for war censorship.

The book still remains the most valuable one for the library of the active flight surgeon. We look forward to a complete revision of the book, when the war is over, censorship is released and the author has the opportunity to do it.

L. H. BAUER

Neo-Natal Care

The New-Born Infant. A Manual of Obstetrical Pediatrics. By Emerson L. Stone, M.D. 3rd Edition. Philadelphia, Lea & Febiger, [c. 1945]. 12mo. 314 pages. Cloth, \$3.25.

THE third edition of Stone's "New-Born Infant" brings together the currently accepted and proved ideas anent neo-natal care in an orderly, scientific fashion. Fundamental physiological and pathological facts are well elucidated in the author's discussion of asphyxia of the new-born. The presentation of the Rh factor and its obstetrical implications is thoroughly up to date. Chemotherapy is likewise discussed with commendable timeliness. Fairness in the handling of controversial subjects is noteworthy. It is astounding how much valuable scientific data can be condensed in so small a volume. Shorn of verbiage, the entire book is of incalculable benefit to all who practice the obstetrical art.

ALFRED A. SCHENONE

Osseous Radiology

The Radiology of Bones and Joints. By James F. Brailsford, M.D. Baltimore, The Williams & Wilkins Co., [c. 1944]. 440 pages, illustrated. 8vo. Cloth, \$12.00.

THIS, the third edition of the *Radiology of Bones and Joints*, is a very complete work on the subject of roentgen diagnosis, of pathology and anomalies of the osseous system. It is unfortunate that the necessary use of special paper for the reproduction of the radiographs causes some confusion in the sequence of the illustrations. An ample bibliography is included. The volume is an excellent reference for all interested in this subject.

RICHARD A. RENDICH

Handbook on Allergy for the Practitioner

Essentials of Allergy. By Leo H. Criepe, M.D. Philadelphia, J. B. Lippincott Co., [c. 1945]. 12mo. 381 pages, illustrated. Cloth, \$5.00.

DEALING with the increasingly popular subject of allergy, this book is written simply and concisely for the special benefit of the medical student and the general practitioner. The relatively complicated subject matter is broken down to its barest essentials for easy understanding. It adds little, however, to the information of the allergy specialist; nor is it a book for lay consumption.

Each topic is augmented by brief illustrative case reports drawn from the author's experience.

The book could be recommended as an excellent introduction to this important field of medicine.

JOSEPH H. FRIES

Biology for the Embryologist

Biological Symposia. A Series of Volumes Devoted to Current Symposia in the Field of Biology Edited by Jacques Cattell. Volume VI—TEMPERATURE AND EVOLUTION. ISOLATING MECHANISMS. GENETIC CONTROL OF EMBRYONIC DEVELOPMENT. Edited by Th. Dobzhansky. Lancaster, The Jacques Cattell Press, [c. 1942]. 355 pages, illustrated. 8vo. Cloth, \$3.50.

THIS is the sixth volume in a series devoted to current symposia in the field of biology. The editor, Professor of Biology at Columbia University, in an admirable foreword discusses the modern tendency toward unification of the biological sciences. It is quite clear that biologists seek control of life processes. A valuable contribution to genetics, pathologists interested in the behavior of malignant cells will find inspiration in this volume.

CHARLES A. GORDON

Workmen's Compensation

Injury and Death Under Workmen's Compensation Laws. By Samuel B. Horovitz, L.L.B. Boston, Wright & Potter Printing Co., [c. 1944]. 5vo. 486 pages. Cloth, \$6.00.

HOROVITZ in his book on Workmen's Compensation has rendered a singular service to the medical profession in that he has taken a very difficult and complex subject and presented it in a unique manner. He has sketched in the early development and the necessity for the enactment of compensation statutes throughout the various states wherein the injured employee is guaranteed certain rights and privileges as compared with the lengthy, costly and circuitous remedies provided under the Employers' Liability Acts in the various states.

Horovitz' book may be highly recommended to those physicians, the major portion of whose practice is devoted to compensation and to those in allied fields whose scope of knowledge necessarily includes an up-to-the-minute digest of recent court opinions in respect to jurisdiction, casual relation and benefits. It is a ready reference manual which should find its way into the possession of every practitioner of compensation law.

CHARLES F. MCCARTY

Endocrine Disorders

Endocrinology, A Brief Review for Physicians. Prepared for the Illinois Department of Public Health with the cooperation of the Illinois State Medical Society, by James H. Hutton, M.D. [Forms: Circular No. 177.] (Springfield, Illinois, Illinois Department of Public Health.) 16mo. 169 pages.

THIS booklet is an outline of endocrinology for diagnosis and treatment. It was prepared by Dr. Hutton for the Illinois Department of Health for distribution to general practitioners. It is a short concise symposium of present day knowledge of endocrinology. The book reads easily. The mooted, enigmatic affects of therapy in pituitary and gonadal lesions are accepted too readily.

BERNARD SELIGMAN

Popular Embryology

Ourselves Unborn. An Embryologist's Essay on Man. By George W. Corner. New Haven, Yale University Press, [c. 1944]. 8vo. 188 pages, illustrated. Cloth, \$3.00.

THIS is a book of extraordinary interest by an eminent human embryologist. Though written for the layman, the physician will find in it a great deal of interesting data made crystal clear to him for the first time. It is a fascinating

study of the development of man from a single cell to a two hundred billion cell seven pound baby. This delightfully written volume by the distinguished Director of the Department of Embryology of the Carnegie Institution of Washington is highly recommended.

CHARLES A. GORDON

Clinical Mycology

Manual of Clinical Mycology. Prepared Under the Auspices of the Division of Medical Sciences of the National Research Council. By Norman F. Conant, Ph.D., Donald Stover Martin, M.D., David Tillerson Smith, M.D., Roger Denio Baker, M.D., and Jasper Lamar Callaway, M.D. Philadelphia, W. B. Saunders Company, [c. 1944]. 348 pages, illustrated. 12mo. Cloth, \$3.50.

THIS volume was developed under the auspices of the Division of Medical Sciences of the National Research Council to furnish the Medical Departments of the United States Army and Navy with compact presentations of necessary information in the field of Military Medicine. It presents the material in twenty-five chapters which are approximately evenly divided between the Superficial and the Systemic Mycoses.

The quality of the text is of the highest and there are 148 excellent illustrations of which 78 are clinical and the remainder depict the fungus in culture or in tissue. The book is unquestionably the best written and arranged in the field of Medical Mycology.

ARTHUR W. GRACE

Revision of Major's Physical Diagnosis

Physical Diagnosis. By Ralph H. Major, M.D. 3rd Edition, Revised. Philadelphia, W. B. Saunders Co., [c. 1945]. 8vo. 444 pages, illustrated. Cloth, \$5.00.

THIS is the third edition of a work on Physical Diagnosis that appears quite satisfactory in all departments of that branch of medicine. Of course in recent years Physical Diagnosis has had to meet the competition of Roentgenology and Electrocardiography, and it is feared that it has to some extent been deserted in favor of the two subjects mentioned. Especially are they resorted to by those seeking "the easiest way" to a diagnosis. There are some reasons for this attitude. For instance, it takes skill and patience to percuss the outlines of the heart, and even then many skilled observers differ in their findings; and resort to X-Ray has to be taken any way. The best results can be achieved by the use of all

aids to physical diagnosis. The busy practitioner is prone to neglect a work such as is now under review. One can guarantee that the habit of more frequent reference to it will prove instructive and highly interesting; just try it; you will come across many old friends you've long neglected. The book contains 457 illustrations and has over 400 pages. There are a few typographical errors, such as on page 183 "beart" for "heart." But as a whole it meets all the requirements demanded of such a work, and one is pleased to recommend it.

S. R. BLATTEIS

New Edition of Interns Handbook

Interns Handbook. A Guide, Especially in Emergencies, for the Intern and the Physician in General Practice. Under the direction of M. S. Dooley, M.D., and Maynard E. Holmes, M.D. 3rd Edition. Philadelphia, J. B. Lippincott Co., [c. 1944]. 16mo. 579 pages, illustrated. Cloth, \$3.00.

THE third edition of this excellent handbook for interns and general practitioners has been extensively revised.

All of the very sensible features noted in previous editions have been retained. In addition there are new chapters on chemotherapy, endocrine disturbances, the vitamins, pulmonary emboli, blast injuries and the newer therapeutic uses of blood products. In addition most of the newer tests which interns are likely to need are described.

The handbook may be recommended without reservation to students, interns and those engaged in the general practice of medicine.

MILTON PLOTZ

Bortz's Diabetic Manual Revised

Diabetes. Practical Suggestions for Doctor and Patient. By Edward L. Bortz, M.D. 3rd Edition, Revised. Philadelphia, F. A. Davis Co., [c. 1944]. 12mo. 304 pages, illustrated. Cloth, \$2.50.

THE most satisfactory results in the treatment of diabetes are generally achieved in those patients who can be taught the many aspects of management, such as the technique of insulin administration, the preparation of diets and menus and proper hygiene. There are many small books on the subject, written in simple style to assist the physician in such an educational program. This small volume can satisfactorily meet this need. It is non-technical, very elementary and presents practical, factual material for the patient.

WILLIAM S. COLLENS

BOOKS RECEIVED

for review are promptly acknowledged in this column; we assume no other obligation in return for the courtesy of those sending us the same. In most cases, review notices will be promptly published shortly after acknowledgment of receipt has been made in this column.

Public Medical Care. Principles and Problems. By Franz Goldmann, M.D. New York, Columbia University Press, [c. 1945]. 8vo. 226 pages. Cloth, \$2.75.

Technical Methods for the Technician. By Anson Lee Brown, M.D. Columbus, Dr. Brown's School for Technicians, [c. 1944]. 8vo. 706 pages, illustrated. Cloth, \$10.00.

An Index of Differential Diagnosis of Main Symptoms. By Various Writers. Edited by Herbert French, M.D., assisted by Arthur H. Douthwaite, M.D. 6th Edition. Baltimore, The Williams & Wilkins Co., [c. 1945]. 4to. 1128 pages, illustrated. Cloth, \$17.00.

A Guide on Alcoholism for Social Workers. By Robert V. Seliger, M.D., in collaboration with Victoria Cranford. Baltimore, Alcoholism Publications, [c. 1945]. 8vo. 94 pages. Paper.

Essentials of Oral Surgery. By Vilray Papin Blair, M.D., & Robert Henry Ivy, M.D., with the collaboration of James Barrett Brown, M.D. 3rd Edition. St. Louis, C. V. Mosby Co., [c. 1944]. 8vo. 624 pages, illustrated. Cloth, \$6.50.

Introduction to Exceptional Children. By Harry J. Baker, Ph.D. New York, The Macmillan Co., [c. 1944]. 8vo. 496 pages, illustrated. Cloth, \$3.50.

Clinical Traumatic Surgery. By John J. Moorhead, M.D. Philadelphia, W. B. Saunders Co., [c. 1945]. 8vo. 747 pages, illustrated. Cloth, \$10.00.

A Manual of Surgical Anatomy. Prepared Under the Auspices of the Committee on Surgery of the Division of Medical Sciences of the National Research Council. By Tom Jones & W. C. Shepard. Philadelphia, W. B. Saunders Co., [c. 1945]. 4to. 195 pages, illustrated. Cloth, \$5.00.

The Specificity of Serological Reactions. By Karl Landsteiner, M.D. With a chapter on Molecular Structure and Intermolecular Forces by Dr. Linus Pauling. Rev. Edition. Cambridge, Mass., Harvard University Press, [c. 1945]. 8vo. 310 pages. Cloth, \$5.00.

The Bacterial Cell. In its Relation to Problems of Virulence, Immunity and Chemotherapy. By René J. DuBos. With an Addendum by C. F. Robinow. Cambridge, Mass., Harvard University Press, [c. 1945]. 8vo. 460 pages, illustrated. Cloth, \$5.00.

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